

ABSTRACT OF THE DISCLOSURE

[122] An approach is provided for bit labeling of a signal constellation. A transmitter generates encoded signals using, according to one embodiment, a structured parity check matrix of a Low Density Parity Check (LDPC) code. The transmitter includes an encoder for transforming an input message into a codeword represented by a plurality of set of bits. The transmitter includes logic for mapping non-sequentially (e.g., interleaving) one set of bits into a higher order constellation (Quadrature Phase Shift Keying (QPSK), 8-PSK, 16-APSK (Amplitude Phase Shift Keying), 32-APSK, etc.), wherein a symbol of the higher order constellation corresponding to the one set of bits is output based on the mapping.